
Heads and their dependents

Section 4.1 looks at head words and their dependents within a phrase. Section 4.2 looks at the positioning of heads within their phrase, examining a major typological division into head-initial and head-final languages. Section 4.3 examines the properties of head-marking and dependent-marking languages, another important typological distinction between languages.

4.1 HEADS AND THEIR DEPENDENTS

This section examines the concept of ‘head of a phrase’, and then moves on to discuss what types of phrases are selected by each class of head as obligatory COMPLEMENTS, and what types of phrases accompany each head as optional modifiers.

4.1.1 What is a head?

In any phrase, we distinguish between the word that is the overall HEAD of the phrase, and other words which are DEPENDENTS to that head. The heads of the phrases in (1) – in bold – are bracketed, and their word class indicated with a subscript: ‘N’ for noun, ‘V’ for verb, ‘A’ for adjective and ‘P’ for preposition. All the other words or phrases are dependents to those heads:

- (1) a. very bright [_N **sunflowers**]
 b. [_V **overflowed**] quite quickly
 c. very [_A **bright**]
 d. quite [_{Adv} **quickly**]
 e. [_P **inside**] the house

The head is the most important word in the phrase, first because it bears the crucial semantic information: it determines the meaning of the entire phrase. So the phrase *very bright sunflowers* is ‘about’ sunflowers; *overflowed quite quickly* is about something overflowing, and so on. To take other examples, *a brass statue* means *a kind of* statue, not a kind of brass, so the head is *statue*; *vegetable stew* is *a kind of* stew, not a kind of vegetable, so the head is *stew*. The word class of the head therefore determines the word class of the entire phrase. Since *very bright sunflowers* in (1a) is headed by a noun, it is a Noun Phrase (NP); *overflowed quite quickly* in (1b) is headed by a verb, so is a Verb Phrase (VP); *very bright* in (1c) is an Adjective Phrase (AP);

quite quickly in (1d) is an Adverb Phrase (AdvP); and in (1e), *inside the house* is a Preposition Phrase (PP) headed by the preposition *inside*.

Second, in all the examples in (1) the head is the only word that has the same DISTRIBUTION as the entire phrase. Wherever the whole phrase can occur, it's possible to substitute just the head. For instance, we could say either *Kim liked very bright sunflowers*, or just *Kim liked sunflowers*; we could say *Go inside the house* or just *Go inside*. We can say *The sunflowers were bright* but not **The sunflowers were very* – therefore, *bright* rather than *very* must be the head of the AP.

It follows that the head can't normally be omitted (setting aside contexts where a head has just been mentioned, and is then omitted, as in *Are you angry?* answered by *Very!*). So the third property of heads is that they are the one obligatory item in the phrase.

There are many contexts, however, in which the dependents to a head can't be omitted either. For instance, in the Verb Phrase *released the hostages*, there's an obligatory dependent Noun Phrase, *the hostages*: we can't just say **The soldiers released*. And the Preposition Phrase *beside the wood* has an obligatory NP too, *the wood*; we don't get **She lives beside*. The reason these dependents can't be omitted is that the heads in each phrase require them to be there: we say that the heads select certain dependents as their COMPLEMENT. Two familiar instances are illustrated in this paragraph: a transitive verb like *release* or *enjoy* requires an object NP, and so does a transitive preposition like *beside* or *into*. The fourth property of heads, then, is that they may select an obligatory dependent, a phrase of a particular class (such as NP) and with specific semantic properties: we can say *She lives beside the wood*, but not **She lives beside the speculation*.

In order to have a 'phrase' of some kind, we minimally require the presence of a head; the phrase may additionally contain some (optional or obligatory) dependents. A Verb Phrase, for instance, must contain a verb and often contains other words too. Knowing this, we can capture certain GENERALIZATIONS (= the simplest and most accurate statement of the facts) about the structure of sentences. For example:

- The subject of a clause is a phrase of one word or more which is headed by a noun (so it's an NP).
- The PREDICATE of a clause (see Section 2.2.1 and Section 3.1.1) is normally a VP; this phrase may contain just a head verb such as *overflowed*, giving us sentences like *The bath overflowed*, or else the VP can contain dependents, as it does in the sentence *The bath overflowed quite quickly*.

4.1.2 The influence of heads on their dependents

Heads play a crucial role in determining certain properties of their dependents. This section examines three kinds of DEPENDENCIES involving a relationship between a head and its dependent(s).

First, in all languages, heads select dependents of a particular WORD CLASS: only dependents of a certain category can occur with each kind of head. For example, in English, a head noun can be modified by an adjective such as *bright* as in (1a), but a

Third, in many languages certain heads require their Noun Phrase dependents to occur in a particular grammatical CASE (see Section 6.3 for more details). Case is a property of NPs which indicates their grammatical function in a phrase or a clause: in languages that have case, NPs are marked in different ways depending on what function they fulfil. Specifically, the NP dependents of verbs and prepositions are often required to occur in a special form (see Section 2.3.2 for discussion of English pronouns): the verb or preposition is said to GOVERN the case of its dependent. For instance, a transitive verb has two arguments, therefore two dependent NPs: the subject and the object. These two NPs fulfil a different function from each other, and in many languages, the subject and the object also differ in form from each other: they are marked with different cases. So in the Japanese example in (4), the subject and object are marked in distinct ways, showing their different functions: the case markers are affixes on the nouns in Japanese. The NP which is the subject of the verb is in the NOMINATIVE case, and the object NP is in the ACCUSATIVE case. Nominative can generally be considered ‘the case that subjects have’ and accusative, ‘the case that objects have’.

- (4) Kodomo-ga hon-o yon-da. (Japanese)
 child-NOM book-ACC read-PAST
 ‘The child read the book.’

In this section we have seen various kinds of DEPENDENCY: a relationship contracted between elements in a phrase or a sentence. These dependencies are (a) the selection of a specific type of argument by a head; (b) agreement: the copying of features from a head to its dependents; and (c) government by a head.

4.1.3 Summary: The properties of heads

To summarize, the main points made about heads so far in this section are:

- The head bears the central semantic information in the phrase.
- The word class of the head determines the word class of the entire phrase.
- Heads are normally obligatory, while other material in a phrase may be optional.
- Heads select dependent phrases of a particular word class; these phrases are sometimes obligatory, and are known as COMPLEMENTS.
- Heads often require their dependents to agree with some or all of the grammatical features of the head, such as gender or number.
- Heads may require their dependent NPs to occur in a particular grammatical case. This is one form of a relationship traditionally known as GOVERNMENT: a head is said to govern the case of its dependent.

4.1.4 More about dependents: Adjuncts and complements

The dependents are all the remaining words in a phrase other than the head. Traditionally, dependents are classified into two main types: ADJUNCTS and COMPLEMENTS.

Adjuncts are always optional, whereas complements are frequently obligatory. The difference between them is that a complement is a phrase which is *selected* by the head, and therefore has an especially close relationship with the head; adjuncts, on the other hand, provide optional, extra information, and don't have a particularly close relationship with the head. Let's first consider some adjuncts. In (5), the heads are again bracketed, and the phrases which are the adjuncts are now in bold:

- (5) a. **very bright** [_N sunflowers]
 b. [_V overflowed] **quite quickly**
 c. [_V talks] **loudly**
 d. [_V sings] **in the bath**

As adjuncts, these phrases in (5) are optional. The adjuncts provide additional information about such things as appearance, location or the manner in which something was done. Adjective Phrases such as *very bright* and Adverb Phrases such as *quite quickly* or *loudly* are typical adjuncts. Preposition Phrases (such as *in the bath*) are often adjuncts too. Evidence that the PP *in the bath* in (5d) is an adjunct comes from the fact that it can be replaced by any number of different PPs, using virtually any head preposition: *before breakfast*, *at the bus-stop*, *on the way to work*, *in the waiting room* and so on. The verb *sing*, then, can have as an optional modifier any PP that makes sense: it doesn't place any syntactic or semantic restrictions on what that PP looks like. Such a PP is a typical adjunct: its form is not constrained by the head verb. Note that *overflow*, *sing* and *talk* in (5) are all intransitive verbs – the presence of an adjunct doesn't affect the transitivity of a verb.

Example (6) shows some heads and their complements, again in bold:

- (6) a. [_V admires] **famous linguists**
 b. [_V wondered] **whether to leave**
 c. [_V resorted] **to the instruction manual**
 d. [_A fond] **of chips**
 e. [_P inside] **the house**

Recall that a verb or a preposition which is TRANSITIVE requires an object NP as its complement. *Admire* in (6a) is transitive: the direct object NP is the complement of a transitive verb. Some verbs are always transitive, such as *release* in *The soldiers released the hostages*: such verbs must have an NP as their complement. Other verbs may be either transitive or intransitive: so *sing*, for instance, can also be transitive, as in *Kim sings folk songs*. The preposition *inside* in (6e) is transitive: it has a complement NP. Like verbs, some prepositions are always transitive (*beside*, *into*) whilst others are sometimes transitive and sometimes not.

The head verbs in (6b) and (6c) aren't transitive, because they don't have objects, but they do nonetheless have complements: the clause selected by *wonder* is its complement, as is the PP selected by *resort*. Compare the PP that is an adjunct in (5d) with the complement PP *to the instruction manual* in (6c). The preposition in the adjunct PP could be almost any preposition (*in*, *on*, *over*, *above*, *beside*, etc.), but

Give is one of a number of verbs in English that have both a direct object NP (*the chips*) and what is sometimes termed an INDIRECT OBJECT (*to Lee*): in English, the indirect object really has no special properties, but is just a PP usually headed by *to* or *for*. As (10) shows, though, there's also an alternative construction with two NP complements. Other verbs that behave like *give* are *send*, *show*, *write* and *buy*. Often, such verbs have an alternative classification as transitive verbs, so we get both *I wrote a letter # to Kim* and *I wrote a letter*.

- Some verbs also take an NP and a PP complement, but don't have an alternation with an NP – NP complement of the kind shown in (10):

- (11) Kim [_{VP} put **the potatoes # into the pan**].
 Kim [_{VP} exchanged **her car # for a new bike**].
 *Kim put the pan the potatoes.
 *Kim exchanged a new bike her car.

- PREPOSITIONAL verbs take a PP complement, shown in bold in (12):

- (12) a. This cake [_{VP} consists **of fruit and nuts**].
 b. I [_{VP} applied **for a new job**].

As noted earlier, the PP complement is headed by a specific preposition, the choice of which is determined by the verb: with a dependent PP, this is the main test for complement status. So you can only *apply for* a job, and not **over* or **against* a job. Some more prepositional verbs are seen in *resort to NP*, *rely on NP*, *glance at NP*, *look after NP* and *long for NP*. Adjunct PPs, however, generally aren't headed by any specific preposition, and crucially, they are optional.

- Some verbs select both a direct object NP and a clausal complement, as in (13). The clausal complement to *persuade* can be either FINITE, *that they should leave early* or INFINITIVAL, *to leave early*.

- (13) Kim [_{VP} persuaded **his friends # that they should leave early / to leave early**].

Verbs like *convince*, *allow*, *encourage*, *force* and *permit* are also in this category, although some of these only select infinitival complement clauses.

- Often, a verb can appear in more than one sub-class. For example, *remember* may take no complement at all: it can be intransitive, as in *I can't remember*. But it can also be a transitive verb, as in (14a), or it can take one of three different kinds of clausal complement, either finite, as in (14b), or non-finite, as in (14c) and (14d). As usual, all the complements (in bold) are contained within the VP headed by *remember*:

- (14) a. Chris couldn't [_{VP} remember **that long shopping list**].
 b. Chris [_{VP} remembered **that they'd left it on the shelf**].
 c. Chris [_{VP} usually remembers **to pick up the list**].
 d. Chris [_{VP} remembered **leaving it on the shelf**].

The finite complement clause in (14b) has an overt subject *they* while the two different types of non-finite complement clause in (14c) and (d) have only an ‘understood’ subject, referring to *Chris*. Because there is no overt subject in these cases, some linguists regard such complements as less than clause-sized phrases, rather than a full clause. Here, I will assume they are clauses.

The non-finite complement in (14c) is an INFINITIVAL clause, containing the infinitive form of the verb *pick up*. In (14d), English has the non-finite *-ing* form of the verb in *leaving it on the shelf*. This is a clause type which Huddleston and Pullum (2002: Chapter 14) refer to as a GERUND-PARTICIPIAL clause: they argue that, contrary to what is normally proposed in traditional grammar, English has no distinction between a ‘gerund’ category and a ‘present participle’ category.

This section does not give a comprehensive list of verb classes, but it illustrates some of the most common sub-classes of verb found not just in English, but cross-linguistically.

4.1.6 Other heads and their complements

Heads other than verbs can also select different complement types. Prepositions, adjectives, adverbs, nouns and complementizers are discussed in this section. Again, their complements are shown in bold type.

- Prepositions have notable variety in their COMPLEMENT STRUCTURE, although less than verbs. We have already seen that some prepositions are always transitive, while others may be intransitive too. There are also prepositions that are only intransitive, such as *nearby*, as in *She lives just nearby*; we don’t get **She lives nearby the bank*. We can tell that *nearby* is truly a preposition by the fact that it co-occurs with the modifiers *just* and *right* (see Section 2.6): *She lives right/just nearby*. A number of prepositions take clausal complements, as *before* does in *Kim left before **the bus arrived***, where *the bus arrived* is an entire clause. And prepositions sometimes take PP complements, as *from* does in *He emerged [_{pp} from **under the blankets**]*.
- Adjectives occasionally take an obligatory complement, but this is rare. For instance, *fond* and *devoid* both take an obligatory PP complement headed by the preposition *of*, as in *fond **of fruit*** and *devoid **of meaning***; hence the ungrammaticality of **This speech is totally devoid*. A much larger number of adjectives take an optional PP complement, again headed by a specific preposition; some examples are *bad/good **at spelling***, *sorry **for your friend*** and *free **from any doubts***. Some adjectives (such as *sorry*, *happy*, *angry*, *glad*, *delighted*) take an optional CLAUSAL complement, as in *Kim felt [_{AP} **sorry that their friends weren’t around**]*. And adverbs sometimes have an optional complement too: [_{AdvP} *unfortunately **for me***], [_{AdvP} *independently **from her parents***].

We’ve seen so far, then, that verbs and prepositions often have an obligatory complement, and adjectives very occasionally do.

- The last major word class is that of nouns. Some complements to N are shown in bold in (15):

- (15) a. J. S. Blogg is [_{NP} a manufacturer **of tyres**].
 b. [_{NP} Lee's belief **in extraterrestrials**] is misguided.
 c. [_{NP} Her assertion **that Martians would land soon**] astounded me.
 d. They repeated [_{NP} their demand **for the library to stay open later**].
 e. [_{NP} Our decision **to leave**] came as no surprise.

Nouns often take optional complements, but not obligatory complements. One exception is the noun *denizen*: you have to be a denizen *of* somewhere, such as *denizens of the local bar*. Complements to N may be PPs, as in (15a), *of tyres*, or *of the local bar*, and (15b), *in extraterrestrials*. The specific preposition within these PP complements is *selected* by the head noun, and this shows that these truly are complements. Some nouns take optional clausal complements, as in (15c) and (15d). (15c) has a finite complement clause – *that Martians would land soon*, and (15d) and (15e) both have infinitival complement clauses – *for the library to stay open later* and *to leave*.

- The final word class in this section is that of COMPLEMENTIZER, a small, closed word class. A complementizer (abbreviated as C) is a word such as *that*, *for*, *whether* which introduces a clause, as we saw in Chapter 3. The clause it introduces is the complement to the head C, and the whole phrase (complementizer plus clause) can be termed CP, a Complementizer Phrase:

- (16) a. Mel said [_{CP} **that she was leaving**].
 b. [_{CP} **For Kim to go too**] would be surprising.
 c. I don't know [_{CP} **whether you should go / whether to go**].

As the examples in (16) show, some complementizers – such as *that*, (16a) – select a finite clause as their complement. Others – such as the prepositional complementizer *for* in (16b) – select a non-finite clause. And some can take either a finite or a non-finite complement clause, such as *whether* in (16c).

4.1.7 Summary: The main properties of complements vs. adjuncts

Here I give a brief summary of a vast topic, in order to help you to keep straight the major distinctions between the two kinds of dependent phrases.

(i) Optional vs. obligatory phrases?

- Adjuncts are always optional phrases. They have a fairly loose relationship with the head that they modify.
- Complements are often obligatory phrases, particularly the complements to verbs and prepositions. They have a close relationship with the head that they modify, and are selected by that head. Complements to adjectives are generally not obligatory, however (*I'm cross **with Lee**, I'm tired **of working***). Complements to nouns are essentially optional (*our hopes **for reconciliation**, the decision **to leave early***).

(ii) Limited vs. unlimited number of dependent phrases?

- A given head may be modified by a potentially unlimited number of adjuncts.
- A given head selects a strictly limited number of complements. Most heads have just one complement (e.g. a transitive verb or transitive preposition each select one object), though two or three complements are also fairly common: (*She put [the book] [on the shelf]*).

(iii) Properties of PP dependents

- PPs that are adjuncts are typified by having a wide range of head prepositions (*Lee danced in the ballroom / on the carpet / under the chandelier / for an hour* etc.).
- PPs that are complements are typified by having a specific head preposition in each of their usages (*We glanced at the clock, She sticks to her diet, They came across a small hut*).

(iv) Word class of complements and adjuncts

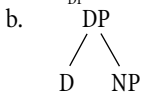
- We can't tell whether a phrase is a complement or an adjunct from its word class. For instance, an NP is most often a complement (to a head verb or preposition), but NPs can also be adjuncts (*He left **last week***). An adverb is most typically an adjunct (*Kim sings loudly*) but can be an obligatory complement, as in *Kim treats Lee **badly***.

4.1.8 Is the noun phrase really a determiner phrase?

In Section 2.3.4, I introduced the closed class of words called DETERMINERS (words like *the, a, some, this, these*) which, I proposed, pair up with nouns to form a noun phrase. In this chapter, we have followed the traditional view that the noun is the head of the NP; under this view, the determiner is one of its dependents. Some linguists consider the determiner to be a particular type of dependent known as a SPECIFIER; we could consider this a kind of adjunct that has a fixed position within the phrase (in English, preceding the head noun). On this view, the other closed class words that pair up with adjectives, adverbs and prepositions respectively (see Chapter 2) are also specifiers: this covers words like *very* in the AP *very happy* and the AdvP *very happily*, and words like *right* and *just* in the PPs *right inside* and *just underneath*.

However, a different view holds that in fact, the determiner is the head of the 'noun phrase', so that this phrase should really be considered a determiner phrase (DP). Under this view, the phrase has a head D, with an NP as its complement, as shown in (17): the head is *this* and its complement NP is in bold in (17a). The 'tree' in (17b) shows the same information as a diagram.

(17) a. [_{DP} this [_{NP} **box of dates**]]



Although the determiner *this* is clearly not the semantic head – the most important element in the phrase in terms of meaning – determiners do fulfil a number of the other criteria for head status outlined in Section 4.1.1. For instance (Section 2.3.4) many determiners can have the same distribution as the entire ‘noun phrase’, as in *I’ll take this/that/these/those/either/some*. The same is not true of the complement NP *box of dates* in (17): **I’ll have box of dates*. This suggests that, indeed, the determiner *this* is the syntactic head. It’s also the one obligatory part of the phrase in (17), which is more evidence for its head status. Furthermore, most determiners specifically select either a singular or a plural NP – *this box of dates* but *these boxes of dates*. So we can say that the head D requires its NP complement to agree with certain properties of the head. It seems, then, that various D elements may indeed select an NP as their complement.

The issue of whether D or N heads the ‘noun phrase’ is not explored further here, and I will continue to refer to a phrase like *this box of dates* as a ‘noun phrase’ without taking a stance on the DP hypothesis. Note, though, that the idea of a closed class word, D, heading a DP has parallels to the less controversial proposal that a closed class word, C (complementizer), heads a clause, which we then term CP.

4.1.9 Phrases within phrases

The dependents of a head are themselves grouped into phrases, and each smaller phrase has its own head which, in turn, has dependents. For instance, in the phrase *very bright sunflowers* in (1a), *very bright* is a dependent – an ADJUNCT to the head *sunflowers*. But in (1c) we see that *bright* is the HEAD of its own phrase, the AP *very bright*. We can indicate this thus: $[[\text{very } [\text{bright}]] \text{ sunflowers}]$.

Linguists often indicate the way a phrase occurs within a larger phrase by enclosing the phrases within square brackets, or by drawing a tree, as I did earlier (Chapter 5 has more discussion). Consider the verb phrase $[_{VP} \text{ sings in the bath}]$, which has the verb *sings* as its overall head. Within the VP there is an adjunct PP *in the bath*, headed by *in*. The brackets indicate the beginning and end of each phrase: $[_{VP} \text{ sings } [_{PP} \text{ in the bath}]]$. Within the PP there’s a dependent NP, *the bath*, which we can also bracket: $[_{VP} \text{ sings } [_{PP} \text{ in } [_{NP} \text{ the bath}]]]$. In this way, we get phrases nested within phrases which, in turn, are nested within phrases. As noted in Chapter 1, this nesting is termed ‘hierarchical structure’, and is a property common to all languages. Each phrase has its own head and its own dependents. So although the PP *in the bath* is a dependent to the head of the whole VP, *sings*, this PP also has its own head and dependents. Within its own phrase a word can’t simultaneously be both a head and a dependent. For instance, the preposition *in* is a DEPENDENT of the verb *sings* within the VP, but within its own phrase – within the PP *in the bath* – *in* is the HEAD.

4.2 WHERE DOES THE HEAD OCCUR IN A PHRASE? HEAD-INITIAL AND HEAD-FINAL LANGUAGES

In this section, I introduce a two-way system of classifying languages which looks at the position of the head in relation to its complements. There is a strong tendency, cross-linguistically, for the head to occur in a fixed position in relation to its complements, and for this order to be the same across all phrases within a language. In HEAD-INITIAL languages the head *precedes* its complements, and in HEAD-FINAL languages the head *follows* its complements. The heads of each phrase are in bold type in this section.

4.2.1 Head-initial languages

English is a head-initial language. Example (18) shows that complements to V, P, A and N all follow the head (which is shown in bold):

- (18) a. [_{VP} **likes** chips]
 b. [_{PP} **into** the water]
 c. [_{AP} **fond** of chips]
 d. [_{NP} **admiration** for Kim]

In (18), both the head verb *likes* and the head preposition *into* precede their complement NPs, while both the head adjective *fond* and the head noun *admiration* precede their complement PPs.

The Celtic languages are all good examples of the head-initial type; I illustrate here with Welsh. As in English, the head P precedes its NP complement:

- (19) [_{PP} **dros** y ffordd] (Welsh)
 over the road

And the verb is also initial within the VP: in (20), *yfed* 'drink' precedes its complement, namely the direct object NP *paned o de* 'a cup of tea'.

- (20) Ddaru Ceri [_{VP} **yfed** paned o de].
 did Ceri drink.INFIN cupful of tea
 'Ceri drank a cup of tea.'

- (21) [_{VP} yfed [_{NP} **paned** o de]]
 drink.INFIN cupful of tea
 '(to) drink a cup of tea'

And in (21), we see that within the VP, there is an object NP which has the head noun preceding its PP complement. The object is *paned o de*, and the head noun *paned* 'cupful' is initial in that NP. You should also be able to see from (21) that the PP *o de* 'of tea' is again head-initial, with the preposition *o* preceding its NP complement.

My final examples of a head-initial language are from the Austronesian language

Tinrin. Example (22) shows that a head verb (in bold) precedes its complement clause within VP, and (23) shows that the head noun (in bold) precedes its complement PP:

- (22) u [_{VP} **tramwâ** mwâ ke maija wake] (Tinrin)
 I know that you much work
 'I know that you work hard.'
- (23) [_{NP} **kò** rugi beebòrrò nrâ mwîê]
 news about drowning POSSESSIVE woman
 'the news of the woman's drowning'

4.2.2 Head-final languages

Examples of clearly HEAD-FINAL languages are Japanese, Turkish, and Lezgian (a language spoken in Daghestan and Azerbaijan). Examples (24) through (27) illustrate from Japanese, with the head word again in bold in each phrase ('dative' is a special case that's often used for recipients, as here):

- (24) Taroo-ga [_{VP} Hanako-ni hana-o **ageta**]. (Japanese)
 Taro-NOM Hanako-DATIVE flower-ACC gave
 'Taro gave Hanako flowers.'
- (25) Taroo-ga [_{VP} tana-ni hon-o **oita**].
 Taro-NOM shelf-at book-ACC put
 'Taro put a book on the shelf.'
- (26) [_{PP} tomodati-**to**]
 friend-with
 'with a friend'
- (27) [_{NP} sono tesuto e no **zisin**]
 that test to POSSESSIVE confidence
 'confidence in that test'

Examples (24) and (25) show that in Japanese verb phrases, the verb is final: in each example the verb has two complements, and these both precede the verb. Example (26) shows that Japanese has a head P *to* 'with' which follows its complement *tomodati* 'friend'. So Japanese is postpositional, not prepositional: see Section 2.6.2. Example (27) shows that the head noun *zisin* 'confidence' follows its complement *sono tesuto e no* 'in that test' (the possessive item *no* is a case marker, showing the relationship between the head noun *zisin* 'confidence' and its complement).

And from Turkish, I illustrate with an adjective phrase: the complement to the adjective (shown in bold) precedes that adjective, as expected in a head-final language. Note the very slightly different use of dative case here, too:

- (28) koca-sin-a **sadık** (Turkish)
 husband-3SG-DATIVE loyal
 'loyal to her husband'

- Ndyuka is a creole language of eastern Suriname. The example in (32) shows an AP (in brackets), *bun fu sama nyan*, with the head adjective *bun* ‘good’ preceding its complement, which is a whole clause *fu sama nyan* ‘for people to eat’. Since the head precedes this complement, this is therefore a head-initial construction.

4.3 HEAD-MARKING AND DEPENDENT-MARKING LANGUAGES

Section 4.2 examined one major cross-linguistic typology, known as head-placement. In this section, we look at another important typological distinction: that between HEAD-MARKING and DEPENDENT-MARKING languages. Section 4.3.1 defines the terms and illustrates the constructions under discussion. Remaining sections give examples from languages of each type, construction by construction, ending by examining the wider picture of typological distinctions between languages.

4.3.1 Definitions and illustrations: Syntactic relationships between heads and dependents

Table 4.1 illustrates four different syntactic relationships – dependencies – between a head and its dependent(s). For ease of exposition, Table 4.1 shows each head before its dependents, but this shouldn’t be taken to imply that only head-initial languages are under discussion; this is not at all the case, as we’ll see.

Table 4.1
Syntactic relationships between a head and its dependent

	Head	Dependent
i.	postposition/preposition	object NP
ii.	verb	arguments of the verb (e.g. subject, object)
iii.	(possessed) noun	possessor NP
iv.	noun	adjective

First, I show these four construction types in English; the relevant heads are given in bold:

- i. **in** [_{NP} the shower] (P + NP)
- ii. Kim **loves** Lee (Su + V + Obj)
- iii. Kim’s **house** (possessor NP + N)
- iv. red **book** (attributive adjective + N)

In this section, we’ll see that languages often mark either the head word or its dependent(s) in some way to signal the syntactic relationship between them. Either the head or the dependent(s) (or sometimes both) will occur in some special form, perhaps taking an affix, or exhibiting some other change in word form. Let’s start with a preliminary illustration. In the noun phrase *Kim’s house*, the HEAD is the noun *house* (because *Kim’s house* IS A house) and the DEPENDENT is the possessor NP *Kim*.

In English, the dependent occurs in a special form here: it has the possessive *-s* affix. The possessed head noun, *house*, however, has no special morphology: it is in its basic form. The *-s* affix shows the possessor NP *Kim* to be a dependent (of a particular kind) to the head *house*. Since it's the dependent that receives the *-s* marking, rather than the head, then *Kim's house* is an example of DEPENDENT-MARKING. In a HEAD-MARKING language, however, the head noun 'house' would occur in some special form. We'll see an example in the discussion of possessive NPs in Section 4.3.4.

The fact that the syntactic relationship between a head and dependent may be marked either on the head or the dependent gives us a broad TYPOLOGICAL distinction (= a division into language types) between HEAD-MARKING and DEPENDENT-MARKING languages. Here's what we expect to find. Typical head-marking languages are those with extensive agreement or CROSS-REFERENCING – heads such as verbs and nouns are marked to agree with grammatical properties of their arguments, for instance number, person and gender. A reminder of such a language, Kambera, can be found in Section 2.2.2.4. For instance, we would expect a head-marking language to have markers on the verb indicating both the subject and the object.

Typical dependent-marking languages, on the other hand, have well-developed case systems: this means that the dependents are marked to show their grammatical relation, say to a head verb or preposition. For instance, subjects and objects themselves appear in a special form which shows that they bear these particular grammatical relations. We've already seen an example of this from Japanese in (4). Subjects bear a special case (nominative), while objects take a different case, known as accusative. English displays a small amount of dependent-marking here too, although it's restricted to the set of first and third person pronouns: see Section 2.3.2. English full NPs don't differ in case depending on grammatical relation, so we get both *My sister saw the girl* and *The girl saw my sister*.

I turn next to examples of the four constructions in Table 4.1 from languages of both types. Dependent-marking languages are more familiar to most readers of this book than are head-marking languages, and so are illustrated first in each section that follows.

4.3.2 Head preposition/postposition and its NP object

English has no marking at all on either head or dependent in this construction: *in the shower*.

4.3.2.1 Dependent-marking in the PP

First, then, I discuss DEPENDENT-MARKING on the object of prepositions within the PP in German. The basic form of the NP meaning 'my friend' is *mein Freund*. If this NP is used as the object of a preposition, then it's a dependent to the head preposition. German prepositions mark their dependent NPs by requiring them to appear in some particular CASE. Example (33) illustrates with two different head prepositions, each requiring a different case:

A second example of head-marking within PP comes from Welsh. Most prepositions in Welsh inflect to agree with their pronominal objects. The basic form of the preposition meaning ‘on’ is *ar*, and three members of its INFLECTIONAL PARADIGM (see Section 1.2.2.3) are shown in (36):

(36)	<i>arna</i>	<i>i</i> ;	<i>arno</i>	<i>fo</i> ;	<i>arni</i>	<i>hi</i>	(Welsh)
	on.1SG	me	on.3.M.SG	him	on.3.F.SG	her	
	‘on me’		‘on him’		‘on her’		

The dependent pronouns in (36) retain their usual, unmarked form (they have no case-marking) while the head preposition *ar* inflects to agree with the pronoun: *arna*, *arno*, *arni*. In the third person singular, the inflection is for person, number and gender. Inflected prepositions are found throughout the Celtic family (of which Welsh is a member) and in a number of other unrelated families, including Semitic (e.g. Arabic, Hebrew).

4.3.3 The clause: A head verb and the arguments of the verb

As noted earlier, English has dependent-marking in the clause only for a subset of pronouns, and not for full NPs at all. English has a tiny amount of head-marking in the clause, as we’ll find later. See if you can figure out what this is before our discussion gets there.

4.3.3.1 *Dependent-marking in the clause*

The main verb in a clause has NP arguments which are its dependents. If we take a simple example of a transitive verb from the DEPENDENT-MARKING language Japanese, we see that the two dependents – subject and object – are each marked with a specific case (by affixes, shown in bold):

(37)	<i>Taroo-ga</i>	<i>tegami-o</i>	<i>kaita</i> .	(Japanese)
	Taroo-NOM	letter-ACC	wrote	
	‘Taroo wrote a letter.’			

The head here, the verb *kaita* ‘wrote’, simply appears in its past tense form, and bears no information about its dependents. Specifically, it has no person or number inflections – no affixes to show who’s doing the writing or what is being written. So there’s no head-marking. But the dependent NPs are case-marked to show their relationship to the head verb: as we saw earlier, the subject of a verb in Japanese bears nominative case, and the object bears accusative case. Again we see that case indicates a dependent-marking construction.

German subjects and objects are also dependent-marked with different cases, again nominative for the subject of a verb and accusative for the object:

(38)	<i>Der</i>	<i>Hund</i>	<i>sah</i>	<i>den</i>	<i>Vogel</i> .	(German)
	the.NOM	dog	saw	the.ACC	bird	
	‘The dog saw the bird.’					

instance, the boy's name – might be mentioned once at the start of the discourse, or else it may be obvious from the context. Full NPs don't need to be explicitly present in most sentences.

Technically, then, there is no grammatical 'agreement' in examples like (40) – the pronominal affixes alone represent the arguments of the verb, and there is no independent subject or object that the verb could 'agree' with here. For this reason, some linguists reserve the term 'agreement' for constructions or languages in which a verb or other head really does agree with another element in the clause, and instead use the term CROSS-REFERENCING for languages like Kambera where pronominal affixes represent the arguments on their own.

Even when the NP dependents of the verb *are* present in the sentence, the head verb is still marked to cross-reference (or agree with) them, as in (41):

- (41) I Ama_S na_S-kei-ya_O na rí muru_O. (Kambera)
 the father 3SG.SU-buy-3SG.OBJ the vegetable green
 'Father buys the green vegetables.'
 (Literally, 'Father he-buys-it the green vegetable'.)

In (41), I've indicated both the subject itself, *I Ama* 'father', and also the subject marker on the verb with a subscript_S (for 'subject'), and I've shown both the object NP *na rí muru* 'the green vegetable' and the object marker on the verb with a subscript_O (for 'object').

Please make sure you understand this kind of head-marking before going further, because it will be vital for understanding later chapters.

4.3.4 Head noun and dependent possessor NP

I turn next to the syntactic relationship between a possessed head noun and the possessor NP which is a dependent to that head. We've already seen one example of dependent-marking in this construction in English – recall the discussion of *Kim's house*. The special pronominal forms *my, your, his, her, our, their* which replace possessive -'s (we don't say **them's house*) are also examples of dependent-marking.

4.3.4.1 Dependent-marking in the possessive construction

Another example comes from a Papuan language called Mangga Buang (POSS is the 'possessive' marker):

- (42) a. sa-te voov b. yi-te bayêên (Mangga Buang)
 1SG-POSS dog 3SG-POSS village/house
 'my dog' 'his/her village (or house)'

Note that in these examples, there is a possessive marker separate from the person/number marker, whereas English uses special possessive determiners here, *my, your, his, her* etc., which encapsulate both person/number *and* possession in a single form.

4.3.4.2 Head-marking in the possessive construction

Now consider the construction shown in (43), from the HEAD-MARKING language Saliba, an Austronesian language from the island of Saliba, Papua New Guinea:

- (43) sine natu-na (Saliba)
 woman child-3SG
 'the woman's child'

The word order of the (dependent) possessor and the possessed (head) N in (43) is just as in English, but the possessor *sine* 'woman' has no marking, while the head *natu* 'child' bears a third person singular suffix which marks agreement with the possessor, *sine*, 'woman': literally, (43) means 'woman child-her'.

4.3.4.3 Double marking in the possessive construction

It is, in fact, rather common for a language to mark *both* the head and the dependent in the possessive construction: such double marking (i.e. both head- and dependent-marking within a single construction) is illustrated in (44) from a Quechuan language called Ayacucho:

- (44) a. runa-pa wasi-n (Ayacucho)
 man-GENITIVE house-3.POSSESSIVE
 'a person's house'
- b. qam-pa wasi-ki
 you-GENITIVE house-2.POSSESSIVE
 'your house'

GENITIVE is a case marker – like *-s* in *Kim's house* – which shows possession; in other words, it shows the relationship between the possessor and the thing possessed (the head N meaning 'house'). Like all case marking, this is an instance of dependent-marking. The head, though, is also marked in this construction to agree with the possessor: it indicates the PERSON of the possessor, so third person for *runa*, 'man/person', the possessor in (44a), and second person for *qam*, 'you', in (44b).

4.3.5 Head noun and dependent AP

I turn finally to a head noun and a dependent adjective that modifies it. There are no examples from English, since neither noun nor adjective is marked in any way.

4.3.5.1 Dependent-marking in the noun + modifying adjective construction

Dependent-marking means here that the attributive adjective agrees with properties of the head noun, such as gender and number. This occurs in many European languages; (45) illustrates from Spanish:

- The Chadian Arabic examples in (50) are dependent-marking. The adjective meaning ‘tall’ is a dependent on the head noun in each example, and agrees with that noun in gender.

4.3.7 Some typological distinctions between languages

Many languages fall fairly neatly into either the head-marking class or the dependent-marking class. Good examples of HEAD-MARKING languages are Abkhaz (a northwest Caucasian language) and the native American language Navajo. In fact, the indigenous language families of the Americas, and in particular North America, are nearly all head-marking: these families include Mayan (e.g. Jacaltec, Tzotzil), Athabaskan (e.g. Navajo), Iroquoian (e.g. Mohawk, Cherokee), Algonquian (e.g. Cree, Blackfoot), Siouan (e.g. Crow, Lakota) and Salish (e.g. Squamish).

Conversely, many languages from the Indo-European family (to which English belongs) are heavily DEPENDENT-MARKING, including German, Greek, Armenian and the Slavonic languages (e.g. Russian, Polish, Czech, Bulgarian etc.). But dependent-marking languages also predominate among the native Australian languages known as Pama-Nyungan (e.g. Dyirbal, Yidiny); the Northeast Caucasian languages (e.g. Chechen); and the Dravidian languages of southern India (e.g. Malayalam).

Another typological possibility is for the relationship between a head and its dependent not to be formally marked at all. This happens most often in languages which have very little morphology (= variation in the forms of words), such as Chinese, Vietnamese, and indeed English. In Chinese, for example, pronouns (and full noun phrases) have the same form whether they are subjects or objects:

- (51) a. **Wo** changchang jian **ta**. (Chinese)
 I often see he
 ‘I often saw him.’
 b. **Ta** changchang jian **wo**.
 he often see I
 ‘He often saw me.’

Example (51) shows that *wo* translates as either ‘I’ or ‘me’, and *ta* as either ‘he’ or ‘him’ (in fact, *ta* translates both ‘he/him’ and ‘she/her’). So the dependent noun phrases aren’t marked in any way in these Chinese examples. In other words, there is no CASE-MARKING in Chinese: the dependents of a verb are not marked to show their relationship to that verb. And neither is there any head-marking, since the verb doesn’t undergo agreement with either the object or the subject. Note that in such a language, the word order is crucial (as in English) to show who’s doing what to whom. We can conclude that although many languages do have head-marking or dependent-marking, some languages have neither.

English has very little formal marking on either heads or dependents. For example, in an English PP such as *in the shower*, neither the head P *in* nor its dependent NP *the shower* is marked to show the syntactic relationship between them. The same

- b. Wir **sehen** den Vogel.
 we.NOM see.PRES.1PL the.ACC bird
 ‘We see the bird.’

For the most part, German is a typical dependent-marking language: dependent pronouns and full NPs are all case-marked, the subjects as *NOMINATIVE* and the objects as *ACCUSATIVE*. But (53) shows that German also has subject/verb agreement, which is head-marking, and this is much more extensive than in English. So in (53a) we have *sehe*, the first person singular form of the verb, when the subject is *ich* ‘I’, and in (53b) *sehen*, the first person plural form, when the subject is *wir* ‘we’.

In fact, head-marking on verbs in the form of verbal agreement (particularly agreement with subjects) is very prevalent cross-linguistically – even in languages which are otherwise systematically dependent-marking. We can regard this kind of head-marking as a property which is typical of both head- *and* dependent-marking languages, rather than seeing it just as belonging to the head-marking class of languages.

4.3.8 Summary

We have seen in this section that languages divide into various classes in terms of the head-marking versus dependent-marking typology. Some languages rarely mark the syntactic relationships between head and dependent at all; these are languages with very little morphology, such as Chinese. Amongst languages that do mark the relationships, there are two major possibilities: the head may be marked or else the dependent may be marked. Some languages exhibit both head- and dependent-marking constructions. Finally, I noted that the occurrence of verbal agreement, a head-marking pattern, is particularly common, even in languages which are generally dependent-marking.

FURTHER READING

Information on the position of the head within a phrase (head-initial or head-final) can be obtained from Chapter 2 of Song (2001). One approach to heads and their dependents can be seen in Hudson (1984, 1990, 2007); in a different theoretical framework, see Radford (1988). Radford also provides extensive discussion of complements and adjuncts (though from a largely English perspective); see especially Chapters 1 through 5 (I recommend reading my Chapter 5 first). The question of whether or not the determiner heads the noun phrase has generated much interest over the years: two central papers are Zwicky (1985) and Hudson (1987). The seminal reading for Section 4.3 on head-marking and dependent-marking languages is Nichols (1986), though I don’t recommend tackling this until you’ve finished this book.

EXERCISES

1. The examples in (1) through (5) all contain at least one noun phrase.

Task: (i) Pick out all the NPs, and put them in square brackets. Make sure that you get the whole of each NP inside your brackets; i.e. the head noun and all its dependents. In some cases, an NP may have another NP embedded within it. Make sure you bracket these too. (ii) List all the subject NPs, all the direct object NPs, and all the NP predicates.

- (1) My idiot of a neighbour wastes stacks of water on his garden.
 (2) This is a planet that could engulf all the surrounding matter.
 (3) They encountered a bigger problem over the fees rise than they initially anticipated.
 (4) This is too long a story for me to tell you right now.
 (5) The only day currently available for your interview is March 12.

2. You will need to revise Section 4.2 for this exercise.

Task: Examine the data in (1) through (5) and decide, for each of the phrases in brackets, (i) what is the head of the phrase (ii) whether the phrase is HEAD-FINAL or HEAD-INITIAL and (iii) what is the word class of the phrase:

- (1) Ahmet [kitab-ı öğrenci-ler-e sat-tı] (Turkish)
 Ahmet book-ACC student-PL-DATIVE sell-PAST
 'Ahmet sold the book to the students.' (Kornfilt 1997)
- (2) [Ondarrúra áño] (Basque)
 Ondarroa up.to
 'up to Ondarroa' (Hualde *et al.* 1994)
- (3) [jek Petritesko čavo] (Romani)
 a Peter.GENITIVE son
 'a son of Peter's' (Matras 2002)
- (4) [yo-gu numa e-na] (Saliba)
 POSS-my house in-3SG
 'in my house' (Mosel 1994)
- (5) Wnaeth hi [fynd â 'r plant i 'r dre ddoe] (Welsh)
 do.PAST.3SG she go.INFIN with the children to the town yesterday
 'She took the children into town yesterday.'

3. You will need to revise Section 4.3 for this exercise. Examine the data in (1) through (7).

Task: (i) Decide what construction type each phrase illustrates – that is, what is the head and what is the syntactic relationship between head and dependent(s).

(ii) Decide whether each construction is HEAD-MARKING or DEPENDENT-MARKING. (iii) See if you can work out why (4a) and (4b) differ from each other.

Hints

- As an example, here is the answer for (1): this is a possessive construction; the head is the possessed noun *halgan* ‘leg’, and its dependent is the possessor *beje* ‘man’. The head is marked for third person singular possessive, POSS, (agreeing with ‘man’), while the dependent has no marking; this is therefore a head-marking construction.
- In (7), concentrate only on the portions in brackets. DATIVE (which we have met before) and ABLATIVE are two different cases. Ablative typically refers to going *from* some location.

- (1) beje halgan-in (Evenki)
 man leg-3SG.POSS
 ‘the man’s leg’ (Nedjalkov 1997)
- (2) dee-n aaxča (Chechen)
 father-GENITIVE money
 ‘father’s money’ (Nichols 1986)
- (3) Ye-sa-núhwe’-s (Mohawk)
 F.SG.SU-2SG.OBJ-like-HABITUAL
 ‘She likes you.’ (Deering and Delisle 1976, cited in Baker 1996)
- (4) a. xiri-con Xijam (Wari)
 house-3M.SG (male name)
 ‘Xijam’s house’
 b. pije’-nequem Hatem
 child-POSS.3F.SG (female name)
 ‘Hatem’s child’ (Everett and Kern 1997)
- (5) a. le rakles-k-i dej (Romani)
 the.M boy-GEN-F mother
 ‘the boy’s mother’
 b. le rakles-k-e phrala
 the.M boy-GEN-PL brothers
 ‘the boy’s brothers’ (Matras 2002)
- (6) az ember ház-a (Hungarian)
 the man house-3SG
 ‘the man’s house’ (Nichols 1986)
- (7) a. Hasan [köy-e doğru] yürü-dü. (Turkish)
 Hasan village-DATIVE towards walk-PAST
 ‘Hasan walked towards the village.’
 b. Hasan [Ali-den önce] git-ta.
 Hasan Ali-ABLATIVE before go-PAST
 ‘Hasan left a little while before Ali.’ (Kornfilt 1997)

4. The data in this exercise are from a Chadic language called Hdi, spoken in Cameroon, and are taken (slightly adapted) from Frajzyngier (2002).

Task: Examine all the data in (1) through (10), and work out the function of the morpheme *tá*, which I have left un glossed in these examples. Where exactly does it occur?

- (1) ngatsa-f-ngats-i *tá* lfid-a lgut
 have-up-have-1SG *TÁ* new-GEN cloth
 'I have new clothes.'
- (2) tsgha-da-f xaxə̀n *tá* sani
 put.up-away-up they *TÁ* one
 'They sent up one (bag).'
- (3) ghwaghwa-ghwaghwa kri
 bark-bark dog
 'A dog barked.'
- (4) si midu-u
 PAST inside-1DUAL
 'The two of us were inside.'
- (5) skwa-skw-i *tá* plis nda ma na hla
 buy-buy-1SG *TÁ* horse and female DEM cow
 'I bought a horse and a cow.'
- (6) nda ngh-i *tá* pta
 STATIVE see-1SG *TÁ* mat
 'I saw the mat.'
- (7) ta skalu-lu *tá* skalu girvidik
 IMPF dance-SU *TÁ* dance(N) night
 'They danced all night.'
- (8) nda ngh-i *tà* pta
 STATIVE see-1SG on mat
 'I saw (it) on the mat.'
- (9) vra-k-vr-i dzagha ka mbaz-i *tá* mbaza
 return-in-return-1SG home then wash-1SG *TÁ* wash(N)
 'I returned home and washed.'
- (10) ta xanay tsa mndu ya *tá* xani dagala
 IMPF sleep(V) the man DEM *TÁ* sleep(N) large
 'That man sleeps a lot.'

5. Before tackling this exercise, you should revise Section 3.3.3. In (1) through (4), you see some serial verbs in Yimas, a Papuan language of New Guinea. The data are all from Foley (1991), with some small adaptations.

Hints

- There are some elements in the glosses that need a few words of explanation. The gloss ‘A’ is for the ‘agent’ (here, the subject) of a transitive verb. We will see more about this term in Chapter 6. For instance, in (1)–(3), there is a verbal prefix *n-*, glossed as 3SG.A, meaning a third person singular agent; this gives us the subject ‘he’ in the translations. And in (4), there is a prefix *ka-*, glossed as 1SG.A, meaning a first person singular agent; this gives us the subject ‘I’ in the translations. The gloss CONT (for continuous) gives an ongoing event, just like *walking* and *sitting* do in the English translations.
- The serial construction itself in each of these examples is a single grammatical word that comprises a number of distinct morphemes; in other words, no part of it can be split off and stand as an independent word. Each of the examples (1) to (3) contains only *one* grammatical word. Make sure you understand this before moving on. There are two independent words in (4), as well as the serial verb construction. These are the words for ‘water’ and ‘canoe’.
- Verb serialization can be formed in two different ways in Yimas, giving rise to two different interpretations. The two serial verbs in Yimas can be simply juxtaposed, i.e. placed next to each other, as is the case in (1), (2) and (3). This implies that the two events are simultaneous, or are very close (in time and space). Alternatively, the serial verbs can be connected by a morphological marker, most commonly *-mpi*, marked SEQ for ‘sequential’; this construction is used for events that occur one after the other, so are sequential, but where one event did not cause the other. An example is (4).

Tasks: (i) First, examine the serial verb constructions in (1) through (4) and decide which typical properties of verb serialization can be detected in these examples. Be as specific as possible in your answer:

- (1) *impa-n-yakal-kulanaŋ-kanta-k*
3DUAL.OBJ-3SG.A-CONT-walk-follow-TENSE
‘He was walking following those two.’
- (2) *pu-n-yakal-çaŋ-tantaw-malak-ntut*
3PL.OBJ-3SG.A-CONT-with-sit-talk-REMOTE.PAST
‘He was sitting down conversing with them.’
- (3) *ura-n-irm-wampaki-pra-k*
fire.OBJ-3SG.A-stand-throw-toward-TENSE
‘He stood throwing fire toward (them).’
- (4) *arm-n kay i-ka-ak-mpi-wul*
water-in canoe SG.OBJ-1SG.A-push-SEQ-put.down
‘I pushed the canoe down into the water.’

(ii) The serial verb examples in (5) and (6) are variants of (4), but both are ungrammatical; these are not possible constructions. Why not? Which principle of verb serialization do these violate? **NB** There is a certain freedom of word order in Yimas, meaning that independent words such as *kay*, ‘canoe’, can be

found in various positions in the clause. But *in itself*, this is not at all relevant to your answer:

- (5) *kay i-ka-ak-mpi arm-n wul
 canoe SG.OBJ-1SG.A-push-SEQ water-in put.down
 ('I pushed the canoe down into the water.')
- (6) *i-ka-ak-mpi kay wul arm-n
 SG.OBJ-1SG.A-push-SEQ canoe put.down water-in
 ('I pushed the canoe down into the water.')

The example in (7), by way of contrast, is *not* an instance of verb serialization. Instead of having a meaning that refers to a single event, pushing the canoe into the water, there are two *separate* clauses here, as the English translation reflects. Each verb receives markers of its own in this construction.

- (7) kay ak-mpi i-ka-wul arm-n
 canoe push-SEQ SG.OBJ-1SG.A-put.down water-in
 'I pushed the canoe and put it into the water.'

(iii) The examples in (8) and (9) are variants of (7), again showing freedom of word order for independent words; both are fully grammatical. Why are these examples possible, unlike the serial verb constructions in (5) and (6)?

- (8) kay ak-mpi arm-n i-ka-wul
 canoe push-SEQ water-in SG.OBJ-1SG.A-put.down
 'I pushed the canoe and put it into the water.'
- (9) ak-mpi kay i-ka-wul arm-n
 push-SEQ canoe SG.OBJ-1SG.A-put.down water-in
 'I pushed the canoe and put it into the water.'

6. This exercise examines a construction known as 'quantifier float' in a variety of Irish English known as West Ulster English (data and discussion taken from McCloskey 2000). Standard English allows both of the constructions in (1), where (a) is said to have a floating quantifier (*all* or *both*), meaning that it's floating free of the phrase (*they*) that it modifies directly in (b):

- (1) a. They have all/both gone to bed.
 b. They all/both have gone to bed.

Many varieties of English also allow questions of the kind in (2). (If you're not a speaker of such a variety, note that *what all*, *who all* etc. require that you answer with a list, and moreover, a full list; if you met Tom, Jack and Nicky in Derry, answering just *Tom* would not be what was required.)

- (2) a. What all did you get for Christmas?
 b. Who all did you meet when you were in Derry?
 c. Where all did they go for their holidays?

What distinguishes West Ulster English is that it also allows questions of the kind in (3), which have quantifier float. The quantifier is said to be 'stranded' (left behind; not attached to the *wh*-word) in these examples:

- (3) a. What did you get all for Christmas?
 b. Who did you meet all when you were in Derry?
 c. Where did they go all for their holidays?

Some further examples from the same dialect follow.

Task: (i) From (3), (4) and (5), formulate an initial hypothesis about where exactly (in syntactic terms) the floating quantifier is 'stranded' in this dialect; note that (5b) and (c) are ungrammatical, and this must be accounted for in your hypothesis too:

- (4) a. What did you give all to the kids?
 b. What did you put all in the drawer?
 c. Who did you meet all up the town?
- (5) a. What did she buy all in Derry at the weekend?
 b. *What did she buy in Derry at the weekend all?
 c. *What did she buy in Derry all at the weekend?

(ii) Next, consider the data in (6): are these examples consistent with your hypothesis? If so, well done; if not, please formulate a new hypothesis that correctly predicts the grammaticality of (6):

- (6) a. Tell me what you got all for Christmas.
 b. Tell me what you've been reading all.
 c. I don't remember what I said all.

(iii) Next, consider the data in (7), which are ungrammatical; do these affect your hypothesis? If the answer is not at all, well done. If these data are not consistent with your hypothesis, can you formulate a new hypothesis that *is* consistent with all the data seen so far?

- (7) a. *Who did you talk all to?
 b. *What were you laughing all at?

Although the data in (7) are completely impossible, those in (8) are, according to McCloskey, only 'slightly degraded'; in other words, a linguistic analysis would have to account for them as possible data. In what way would these require your hypothesis to be amended?

- (8) a. ?Who did you talk to all (at the party)?
 b. ?Who was he laughing at all?